

IN THE CLAIMS:

Please cancel claims 2 ✓ and 3. ✓

Please amend claim 1 as follows:

1. (twice amended) A system for controlling a manufacturing production line using[designing] a virtual kanban system and [usable with] a manufacturing execution system comprising:

said manufacturing execution system for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

[means for inputting a plurality of operating requirement parameters to define a kanban system model;]

a database for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

a simulating system [means] for simulating operation of said production line according to said model, said simulating system using said feedback data from said database in performing said simulation, said simulating system further

comprising a user interface through which changes to said model can be made;

wherein said manufacturing execution system monitors consumption of said production inputs and orders additional production inputs using electronic kanbans which are cycled in response to said feedback data [said simulating means determines start and end of each kanban stage in said kanban system and the number of cards for each kanban stage based on said model].

(Please add the following new claims.)

4. (new) The system of claim 1, further comprising a plurality of input stations located along said production line, wherein each of said input stations provides a user with access to said model in said database and allows said user to override said model and input instructions to said manufacturing execution system.

5. (new) The system of claim 1, wherein said feedback data is divided into two sets of data received by said manufacturing execution system in separate transmissions of said feedback data,

wherein a first of said two sets of data comprises data specifying a type of equipment in said production line; and

wherein a second of said two sets of data comprises data specifying an operating status of said equipment, status of said product lots and status of said production inputs.

B1 Sub. D1 6. The system of claim 5, wherein said manufacturing execution system rechecks a routing schedule for said production inputs and said product lots each time a transmission of said second set of feedback data is received.

7. (new) The system of claim 5, wherein said manufacturing execution system determines a capacity of said equipment in said production line based on said first set of feedback data and generates routes for said product lots in accordance therewith.

8. (new) The system of claim 7, wherein said manufacturing execution system scans generated routes for equipment in said production line without a determined capacity to determine potential problem areas in said generated routes.

9. (new) The system of claim 1, wherein said system records a history of changes in said feedback data for use by a user in upgrading said model.

10. (new) The system of claim 1, wherein said manufacturing execution system generates a kanban parameter for each piece of said equipment in said production line which uses a production input.

11. (new) The system of claim 10, wherein said manufacturing execution system generates proposed kanban stages within said production line defined in accordance with said kanban parameters.

12. (new) The system of claim 11, wherein said ~~manufacturing execution system~~ uses said kanban parameter for a piece of equipment in operating two or more production input and product lot routes which each include that piece of equipment.

13. (new) The system of claim 1, wherein said production line produces semiconductor devices.

14. (new) A system for controlling a manufacturing production line using a virtual kanban system and a manufacturing execution control means comprising:

13, said manufacturing execution control means for automatically controlling routing of product lots and production inputs in said manufacturing production line based on a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution control means;

14, database means for storing said model and said feedback data, wherein said feedback data is used to provide values for variables of said model; and

15, simulating means for simulating operation of said production line according to said model, said simulating means using said feedback data from said database means in performing said simulation, said simulating means further comprising a user interface means through which changes to said model can be made;

16, wherein said manufacturing execution control means monitor consumption of said production inputs and order additional production inputs using electronic kanbans which are cycled in response to said feedback data.

15. (new) The system of claim 14, further comprising a plurality of input stations located along said production line, wherein each of said input stations provides a user with access to said model in said database means and allows said user to override said model and input instructions to said manufacturing execution control means.

16. (new) The system of claim 14, wherein said feedback data is divided into two sets of data received by said manufacturing execution control means in separate transmissions of said feedback data,

wherein a first of said two sets of data comprises data specifying a type of equipment in said production line; and

wherein a second of said two sets of data comprises data specifying an operating status of said equipment, status of said product lots and status of said production inputs.

17. (new) The system of claim 16, wherein said manufacturing execution control means rechecks a routing schedule for said production inputs and said product lots each time a transmission of said second set of feedback data is received.

18. (new) The system of claim 16, wherein said manufacturing execution control means determines a capacity of said equipment in said production line based on said first set of feedback data and generates routes for said product lots in accordance therewith.

19. (new) The system of claim 18, wherein said manufacturing execution control means scans generated routes for equipment in said production line without a determined capacity to determine potential problem areas in said generated routes.

20. (new) The system of claim 14, wherein said system records a history of changes in said feedback data for use by a user in upgrading said model.

21. (new) The system of claim 14, wherein said manufacturing execution control means generates a kanban parameter for each piece of said equipment in said production line which uses a production input.

22. (new) The system of claim 21, wherein said manufacturing execution control means generate proposed

kanban stages within said production line defined in accordance with said kanban parameters.

23. (new) The system of claim 21, wherein said manufacturing execution control means use said kanban parameter for a piece of equipment in operating two or more production input and product lot routes which each include that piece of equipment.

24. (new) The system of claim 14, wherein said production line produces semiconductor devices.

25. (new) A method for controlling a manufacturing production line using a virtual kanban system, the method comprising:

automatically controlling routing of product lots and production inputs in said manufacturing production line with a manufacturing execution system using a production scheduling model, wherein feedback data from said production line is provided to said manufacturing execution system;

storing said model and said feedback data in a database, wherein said feedback data is used to provide values for variables of said model;



simulating operation of said production line according to said model with a simulating system, said simulating system using said feedback data from said database in performing said simulation; and

monitoring consumption of said production inputs with said manufacturing execution system and ordering additional production inputs using electronic kanbans which are cycled in response to said feedback data.

26. (new) The method of claim 25, further comprising entering changes to said model through a user input device.

27. (new) The method of claim 25, further comprising overriding said model and inputting instructions to said manufacturing execution system with a plurality of input stations located along said production line.

28. (new) The method of claim 25, further comprising:

dividing said feedback data into two sets of data; and

transmitting said two sets of data to said manufacturing execution system in separate transmissions;

wherein a first of said two sets of data comprises data specifying a type of equipment in said production line; and

wherein a second of said two sets of data comprises data specifying an operating status of said equipment, status of said product lots and status of said production inputs.

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29. (new) The method of claim 28, further comprising rechecking a routing schedule for said production inputs and said product lots each time a transmission of said second set of feedback data is received.

30. (new) The method of claim 28, further comprising determining a capacity of said equipment in said production line based on said first set of feedback data and generating routes for said product lots in accordance therewith.

31. (new) The method of claim 30, further comprising scanning generated routes for equipment in said production line without a determined capacity to determine potential problem areas in said generated routes.

32. (new) The method of claim 25, further comprising recording a history of changes in <sup>D</sup> said feedback data for use by a user in upgrading said model.

B/ 33. (new) The method of claim 25, further comprising generating a kanban parameter with said manufacturing execution system for each piece of equipment in said production line which uses a production input.

34. (new) The method of claim 33, further comprising generating proposed kanban stages within said production line in accordance with said kanban parameters.

35. (new) The method of claim 33, further comprising using at least one of said <sup>D</sup> generated kanban parameters for a piece of equipment to operate two or more production input and product lot routes which each include that piece of equipment.

36. (new) The method of claim 25, further comprising manufacturing semiconductor devices with said production line.